Auxiliary metadata: Endemism and Biodiversity Database

GIS #	Comments
07106	Spray zones, waterfalls, talus-fracture rock formations, seeps or springs, stream edges; *see species conservation plan map northern Idaho, western Montana, southeastern B.C.; clear cold streams, mountain lakes, in streams and under rocks and logs in humid forests, near mountain streams, or rocky shores; and ponds just into mountain; clear, cold swift moving mountain streams usually in considerable canopy cover open year forest edges of forest area; rock site and wood.
06107	See 07106 Astr. Blue Mountains have populations of Astr that are isolated form other pops (far to west), close to coast.
03111	An area of overlap for these bio species (regional endemics).
04112	
03113	Limited info.
02108	Limited info.
02109	
08115	Part in "birds of prey" area some mining and grazing problems. Disjunct, declining to east. Possibly declining in eastern ID. Declines in eastern ID.
02209	
02115	Big sage brush/grass. Sandy soils, marshy edge of Moses Lake; this is a subspecies of a ubiquitous species-geographical restricted shrub steppe habitat; rareness probably due to low sampling effort.
03115	All are west side species that are restricted to forest east slope of Cascades.
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04118	
05128	All are Great Basin species and represent northern extension of principal ranges. Keyed to existence of shrub steppe/salt desert scrub/artemisia habitats. Deep, sandy soils. Shrub steppe/grassland of N. Great Basin.

06111 All are Great Basin species and represent northern extension of principal ranges. Keyed to existence of shrub steppe/salt desert scrub/artemisia habitats. Deep, sandy soils. Shrub steppe/grassland of N. Great Basin.

08119 All are Great Basin species and represent northern extension of principal ranges. Keyed to existence of shrub steppe/salt desert scrub/artemisia habitats. Deep, sandy soils. Shrub steppe/grassland of N. Great Basin.

06112 5,6, is probably geologic isolate restricted to Wieser & Payette Valleys. Other spermophilus are vicariants. All tied to arid grass/shrub habitats of northern Great Basin. B. idahornsis tied to large, big sagebrush habitats, deep well drained soils, fine texture-no clay.

07109 5,6, is probably geologic isolate restricted to Wieser & Payette Valleys. Other spermophilus are vicariants. All tied to arid grass/shrub habitats of northern Great Basin. B. idahornsis tied to large, big sagebrush habitats, deep well drained soils, fine texture-no clay.

08120 5,6, is probably geologic isolate restricted to Wieser & Payette Valleys. Other spermophilus are vicariants. All tied to arid grass/shrub habitats of northern Great Basin. B. idahornsis tied to large, big sagebrush habitats, deep well drained soils, fine texture-no clay.

07110 Southern periphery and extension of boreal species; occupy subalpine/alpine bogs closed Montana forests/out competed by T. amoenus in open.

09104 Southern periphery and extension of boreal species; occupy subalpine/alpine bogs closed Montana forests/out competed by T. amoenus in open.

04114 Selected general/species surviving remnants of remaining habitats due to geologic events.

04115 North facing slopes, Columbia gorge, high elevation, wet.

05115 High elevation, disjunct populations.

05116

05117 See Alvord desert report and highway, some paved.

02110 Sand area near river and highway, some paved.

05118 Summer Lelee, Saleni Lake margin, and fresh water spring.

05119 Harney Hot Springs-priority lots of species, tied to area, grazing conflicts, thermal clines historic lake boundaries-what were consequences of rising lake levels.

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05122 Cow lakes (? Exact location thermal water).

05123 Highest # of species.

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08118 Crates of noon see Horning & Barr 1970.

02111 See Oman 1987 for detailed distribution of Errhomus spp.

02112 Yellow Stone National Park.

06110 Tollgate Springs.

03114 Tieton Canyon, WA.

02113 Boardman Bombing Range.

03105 Thetolius Treadwaters.

03106 Deschutes Redmond.

0317 Tumalo, Wallowas-Imnaha.

06105 Bruneau Hot Spring.

05107 Bruneau Hot Spring.

03108 Deschutes River below Peltondam assoc. With other rare spp.

02114 Jackson Lake, WY.
02106 Columbia Gorge or east to J. Day River, Columbia Gorge or side of Columbia Gorge only.

03109 Lower Deschutes from Maupin down. Central, lower Deschutes River in large springs occurs with endemic humineha inc. Pristinicola hemphilli.

03110

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04104 East side springs of Upper Klamath Lake. Barkley Springs: Endemic-Vorticifex Klamathensis sinitsini fish use: spawning & pivenele rearing Nasmodie side of lake.

04105 Fish use: adult. (Westside, Upper Klamath Lake springs).

04106 Goose Lake.

05108 Borax Lake.

05109 Mathew Cave.

05110 Crooked Creek, very rare midge.

04107 Warner Lake, include Forkett Springs.

04108 Jenny Creek.

05111 Catlow Valley; 3 Mile Creek.

05112 Alvord-circumscribes larger basin, include Trout Creek.

04109 Guano Lakes.

04110 A variety of Tui Clubs including a district one at Ex Springs, Summer Lake, Hutton Spring.

04111 Silver Lake.

04113 Upper Klamath Basin, Klamath Lamprey Pit, Klamath Book Lamprey.

05113 Malheur/Hauney Basin, distinct population of Columbia Basin forms.

05114 Willow White Horse.

02107 Walla Walla/Umatilla.

10101 Chicken Peak and McAffee Peak. Within this area there are a total of 67 separate Lathyrus grimesii that cover a combined area of no more than 400 acres. All L. grimesii populations in this area occur on the siliceous and volcanic assemblage known as the Schoonover formation to which it is restricted through its range. The eastern portion of this area contains several populations of Trifolium liebergii.

10102 Wilson Peak.

12201 High elevation lakes on the Yellowstone Plateau on the edge of rhyolite flows. Relating high precipitation causing scattures bags/swamps. In addition, numerous thermal areas with high heat flow creating a mosaic of habitat types. Concentration of disjunct species and some regional endemics.

12202 Swamp/bog/marsh system on the windward side of the Yellowstone Plateau. Relating high precipitation leading to extensive swamps, riparian systems, etc. Concentration of disjunct species from both the Boreal North and Pacific NW.

12203 High precipitation results in wet forests with strong affinity with the Pacific NW. Also extensive areas of bogs and lakes with numerous rare or disjunct wetland species.

12204 High concentration of state rare species in a mosaic of forest and wetland habitats.

12205 High concentration of state and regionally rare species associated with wet forest and limestone/calcareous substrates. High precipitation results in forests with an affinity with the Pacific Northwest.

12206 High concentration of state rare and regionally endemic species in a diversity of habitats including alpine limestone, wet forest, and calcareous meadow.

12207 Geologic diversity due to a major fault results in exposures of calcareous and granitic substrates and a mosaic of habitats. Includes a concentration of alpine limestone species, including several disjunct or regional endemics. High diversity of forest and wetland habitats.

12208 High diversity of habitats due to range of elevation from low rivers to high alpine. Rich assortment of vegetation types including forb meadows, Douglas-fir & Engelmann spruce

forests, alpine.

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05102 * Not endemic.

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04101 All endemic to this particular center of endemism.

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04102 * Endemic to this particular center of endemism. All others are regionally endemic with significant component of range within this center of endemism.

04103 * Endemic to this particular center of endemism. All others are regionally endemic with significant component of range within this center of endemism.

04201 Many unique, possible endemic vascular plant species located on the volcanic caldera of Mt. Mazama.

04202 Disjunct Cascade species. The geologic confluence of Yawhee Plateau fault scarp and Swan Lake volcanic cone provide an environment for unusual and disjunct species.

04203 Center for these populations. Also large, dry-site white fir communities.

04204 Plant diversity appears to be function of a convergence of Sierra Nevada, Cascade Range, Great Basin and Raly Mt. species. The Warner Mts. are isolated from the Cascade Range and surrounding deserts to the north and east. Unique parent materials includes Oligocene sedimentary rocks (bedded siltstone and sandstone), rhyolite ashflow tuffs, and esitic air full pyroclasic deposits, basalt flows or small local rhyolite flows (Riegel and Schoolcraft 1990; Riegel et al. 1990).

04205 Diverse in relation to surrounding landscape. Wide variation in elevations, slope, aspect and soils results in many plant communities, including sagebrush, juniper and grassland dominated communities. There are some excellent riparian associations.

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01101 Nine-mile creek. Talinum know from the Okanogan Highlands near Republic and southern B.C. Carex know from 2 sites on the Colville National Forest, 1 site in Montana and a few sites in southern B.C. (Kathy Ahlenslager).

01201 This area is included because during continental glaciation, the rocky peaks were removed by ice, thus leaving broad, rounded summits. Thus, the assessment does not include Windy Peak, Mt. Remmel, and by the most liberal interpretations would extend no farther west than Whistler/Sheep Mts. (A.B. Adams, Larry Loftis, Bud Kovalchik, George Wooten, Lanette Smith.)

01202 Allocated as research natural area in forest plan. Contains unique wetland/bog habitat. (Larry Loftis.)

01203 This is a proposed research natural area on the Colville National Forest, Sullivan Lake Ranger District. It encompasses 12 sensitive plant species (R6) and 10 riparian plant associations, many of which are unique in species composition. (Bud Kovalchik, Kathy Ahlenslager)

01204 Colville National Forest, Sullivan Lake Ranger District, proposed research natural area. There are a high number of plant associations known from here, as well as 5 sensitive plant species and unique plant associations. (Bud Kovalchik, Kathy Ahlenslager.)

01205 State of WA natural area with many rare species. (Larry Loftis).

01206 Like Roger Lake, this is in transition from the east Cascades and Okanogan Highlands. Many sensitive species. Dodecatheon taxon is suspicious, see John Gamon. The area includes diverse subalpine and alpine areas. (Bud Kovalchik, Larry Loftis.)

01207 Colville National Forest, Kettle Falls Ranger District, this area has a high concentration of sensitive species as listed in R6. (Kathy Ahlenslager).

01208 Okanogan National Forest, Tonasket Ranger District and private lands. Many sensitive species, wetlands. The area is overused by agriculture around Chesaw, overgrazing on private lands.

01209 Large fen, bog, carr and forested wetland complex. Several sensitive plants and a wide diversity of wetland plant associations. High montane zone. Being considered for Research

Natural Area. Ecology data available from Bud Kovalchik.

01210 Unique mix of species and plant associations in mixed ownership (partnership) with the Colville National Forest, Republic Ranger District and Colville Tribe. Ecology plot data available from Bud Kovalchik.

01211 Largely roadless U.S. Forest Service/Colville Tribe area with wide diversity from: 1) low elevation andesite cliffs, canyons, and rock domes around the Sandpoil River; 2) subalpine green fescue meadows around White Mts.; 3) wetlands such as Hall Pond. (Bud Kovalchik)

01212 High montane and subalpine plant associations, including some old growth Pinus albicaulis stands that are being wiped out by blister rust. Cirques with associated wetlands. Hognose Lake. (Bud Kovalchik)

01213 Colville National Forest large series of glacial lakes and associated carrs, fens, and bogs (largest concentration of willow stands that Bud Kovalchik knows of in the Okanogan Highlands). Several sensitive species and a wide variety of riparian and wetland associations. (Bud Kovalchik)

02101 Robert Sprecht

02102 Robert Sprecht

02103 Robert Sprecht

02104 Karl Urban.

02105 Encompasses concentrated populations of C. umbellata, plus other species of the dry rock channel microhabitat. (Karl Urban)

02201 Special areas include Rainbow Creek Research Natural Area, old growth western white pine, pure stand old growth western larch. Plant associations of biodiversity focus: camas meadowlands, Agropyron spicatum/Festuca idahoensis, Pinus monticola, Larix occidentalis, inland empire refugia for Cascadian species (Sheep Creek Botanical Area, Pomeroy Ranger District, Umatilla National Forest). (Karl Urban)

02202 Plant communities: Pipo/Feid, Pipo/Syal, Pipo/Phma, Pipo/Fesc, Hoaq, Sipa, Pope, Tecavi, Aldoco, Erpi, Artr2/Feid, Psme/Phms, Pipo/Prtr. Sharptail grouse habitat, vernal pools and pothole ponds. Protected areas: Marcellus Shrub Steppe NAP, Spring Creek Canyon NAP, Turnball WLR, Mt. Spokane State Park, Dishman Hills NRCA, Pinecroft NAP. (Robert Sprecht, PC)

02203 Northreys Canyon, Capy, Aldo, Teca, Epgi, Niat, Artr/Feid, Arri/Pose, Erth/Pose, vernal pools, Artr/Stipa comata, Artr/Agsp, Misu, Elro. Protected areas: Castle Rock NAP, Steamboat Rock State Park. (Robert Sprecht, PC)

02204 Phle, Assi, Dele, Asmipa, Illo, Artr/Agsp, Arri/Feid, Putr/Feid, Hahidi, Capy, Epgi, Niat, Saam, Saex, Beoc, Saex, Crle, Cahy, Erpi. Protected areas: Moses Coulee, Douglas Creek, Rock Island Creek, Badger Mt., Titchenal Canyon. (Robert Sprecht, PC)

02205 Putr/Feid, Erdo/Pose, Feid/Hicy, Rock Creek bird diversity, Quercus Woodland. Protected areas: Badger Gulch NAP, Columbia Hills NAP, Cleveland Shrub Steppe NAP. (Robert Sprecht, PC)

02206 Ermi/Phma, Feid/Syal, Agsp/Feid, Pipo/Phma, Riir, Sisp, Trdo, Hali, Asje, Rioxco, Rioxir, Runi, Asri, Rico, Chle. Protected areas: Smoot Hill Biological Study Area, Campus Prairie Biological Study Area, Lyle Grove Biological Study Area, Rose Creek Biological Study Area, Kramer-Palouse Biological Study Area, Kamiak-Butte State Park. Contributor: ?? Note: there were many rare plants listed with common names. These need to be in scientific nomenclature.

02207 Topographic features: active sand dunes, seeps, ridge crests, talus, riverine shoreline, slopes with deep soils, valley/playas. Vegetative communities: big sagebrush/bunchgrass, rigis sagebrush/Sandberg's bluegrass, black greasewood/saltgrass-Sandberg's bluegrass, spiny hopsage/Sandberg's bluegrass, Eriogonum thymoides/Sandberg's bluegrass, winterfat/Sandberg's bluegrass, three-tip sagebrush/bunchgrass-wheatgrass, antelope bitterbrush/Indian ricegrass-needle and thread grass, rock buckwheat/Sandberg's bluegrass, various riparian types along free-flowing Columbia River. (WR, KR)

02208 Stable, unstable sand dunes. Juoc/Prtr, Artr/Prtr, Prtr/Orhy, Cole, Psla, Elfl, Reve, Lagl, Abme, Agda, Koco, Assu.

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06201 Communities are relict or refugium patches of Cascadian vegetation (Oplopanax). Mature Taxus brevifolia (riparian, Turkey creek and Panjab Creek). Inherent vegetation patterns: steep slopes (< > 25%, 40-70% common). Abgr on ash, Agsp on both deep and shallow soils, Feid on loess, Psme (Psme on loess) Phma, Syal, Agsp (deep and shallow soils), Pipo/Syal, Pipo/Agsp on residual soil gentle slopes (25%), Pipo, Psme, Abgr, riparian communities of Alin, Salix, Potr2, sedge, Abgr and Abla2. Scabland Agsp. Change elevation from within 3 air miles. (Fred Hall, Karl Urban)

06202

06203 Communities: Abla2, Cele on Mt. Horrible. Inherent vegetation pattern due to site: steep slopes (>25%, 50 to 90% common): Abgr on ash, Agsp on deep and shallow residual soil, some Feid on loess, horizontal Psme/Phma or Psme/forb, vertical Psme, Phma, Prde/Syal seeps and steep scabland. Gentle slopes (25%), Abgr on ash, Feid on loess, Agsp on deep and shallow residual soils, Abgr on ash, Pipo and Psme/Phma, Psma/Syal; Pipo/Agsp on residual soils, Psme/Phma on loess or ash, Agsp on deep and shallow residual soils. Range in elevation from 1600 to 3000 feet in 4 air miles. (Fred Hall, Karl Urban)

06204 Communities: aspen-sedge (S. Jarboe mde). Calamagrostis canadensis, Deschampsia atropurpurea meadow. Inherent vegetation pattern: steep slopes (>25%, 30-70% common): Abgr on ash, Agsp on deep and shallow residual soils, steep scablands have Phma, Psme/Phma on residual soils (vertical), Pipo, Psme/Agsp on residual soils. Gentle slopes (<25%) (60% of the area) Abgr, Laoc on ash, Pien, Abgr on ash, Alin/salix riparian. Elevation change from 2400 to 5800 feet in 10 miles. (Fred Hall, Karl Urban)

06205 Lowest elevation and hottest climate in the Blue Mts. This provided a refuge for species as the climate changed to colder than it had been. Majority of area is basalt substrate, but there are outcrops of limestone, granitics and other sedimentary, old rocks. Although the area is generally very dry, perennial springs and creeks provide unique habitat that supports unusual species. Steep slopes and inaccessibility have protected some areas from the extreme overgrazing that has occurred in other parts of the canyon. The extreme elevation changes in a very short distance provides a very wide variety of species and habitats. Seven Devils Mts. and the rim of Hells Canyon provide habitat for subalpine species. (Jimmy Kagan, Paula Brooks)

06206 Mature Pipo riparian. Purshia tridentata, Pipo, Abgr mosaic of basalt and John Day ash soils and plants. Inherent vegetation: steep slopes (>25%) (mostly residual soils): Pipo/Agsp, Artr/Agsp, Agsp on shallow soils, Pipo/Cage; Juoc/Artr, Artr in degraded soils. Gentle slopes (25%): Pp/Caga, Arri scabs, Juoc/Artr, Arar, Cele; Juoc/Artr and Arar on degraded soils, elevation change from 1800 to 5000 feet in 6 air miles. (Fred Hall, Karl Urban)

06207 Serpentine contact. Pinus albicaulis/Artemisia rigida community. Inherent vegetation

diversity: (slopes generally less than 30%). Abgr on ash, Dicol on ash (persistent), Psme on residual soil, Alin/Salix in riparian, Carex in wet meadows, Deca in moist meadows, Abla2, Poph on degraded serpentine, Pial/Abla2, Carex subalpine on serpentine outcrops. Elevation changes 3800 to 8100 in 18 air miles. (Fred Hall, Karl Urban)

06208 Unusual rock types (granitics, limestones, metamorphic, sedimentary rocks). Subalpine habitat types. Area is in relatively pristine condition. Very little logging or grazing has occurred recently. Many species that are common in the Cascades are found in the Elkhorns and nowhere else in the Blues (not even in Wallowas). Several Rocky Mt. and boreal species found in the Elkhorns. Lots of boggy areas, wet meadows and well developed riparian zones. One species of Lomatium (erythrocarpum) is found only in the high elevation areas of Elkhorns. 3 other species are found only in the Elkhorns and Wallowas. South slope and steep areas dominated by large ponderosa pine and mountain mahogany.

06209 Area represents an island rising above a large area of rangeland. The steep elevation gradient, from 1200 feet along the Snake River to over 7100 feet at the summit and the abundance of limestone and contacts with other rock types are the most obvious factors contributing to the diversity of the area. Historic phytogeographic patterns may have contributed to this diversity. The lower slopes of the mountains are primarily rangeland and the upper elevations are forested, mainly with Douglas-fir with smaller amounts of ponderosa pine, lodgepole pine, juniper and scattered stands of quaking aspen. The summit is steep, unforested grassland with a high diversity of forbs. Need more inventory of plants. Communities include Populus tremuloides, Psme, Pipo, Agsp/Artr, Agsp/Feid, other sage spp., scabland, limestone outcrops and cliffs, riparian areas along Snake River, low gradient tributaries and high gradient.

06210 Upper Bridge Creek (Pisgah meadows) has only sphagnum meadow in Ochoco's. Includes Cascadian species unusual to the Ochocos. Mt. Pasgah includes Abies lasiocarpa, Pinus contorta communities and high elevation Artemisia tridentata vaseyana communities, with moist Abies grandis and Picea engelmanii extending down the north slopes. Big Summit Prairie has good condition dry meadows with relatively intact native grass species. This includes the largest populations of rare species Calochortes longbarbatus peckii, a C2 candidate for listing. This area is dissected with wet sedge, Deschampsia cespitosa communities on shallow soils with swales where the two Wyethia species hybridize. The lower elevation Pinus ponderosa, Pseudotsuga menziesii, Populus tremuloides, P. trichocarpa communities are separated by large Artemisia rigida and A. arbuscula scablands.

06211 Strawberry Mt. has an area of extreme habitat diversity. It includes serpentine soils, weathered ash, pronounced alpine cirques. It includes all habitat for a C1 species: Luinia serpentina. Includes nest example of some rare habitats: Abgr/Spbe, Pipo/Spbe, Pipo/Caru and Pipo/Laoc old growth. Includes Logan Valley and Southern Bear Valley

for habitat diversity and wildlife habitat. (Dick Vanerschael, Carolyn Wright)

06212 Area is floristically very diverse and has many endemic species. Also there are lots of Rocky Mt. and boreal species. Unusual rock types are responsible for much of the high diversity and unusual plants. Limestone, greenstone and argillites. Most of the endemism is related to limestone and other calcareous soils. High elevation, cold air drainages (Hurricane Creek, Lostine River and west and east forks of Wallowa River) provide special climate for Rocky Mt. and northern species. Many of these are found nowhere else in Oregon. The mountain range is essentially an island in otherwise lower and river area. The mountains catch much more snow and rain than the surrounding area. This contributes to the great variety of wetland affiliated species. Duck Lake and Twin Lakes area have large areas of sphagnum bogs. Many species found here are unusual or totally unknown elsewhere in Blue Mts.

06101 Floristically diverse with broad spectrum of plant communities in a mosaic pattern.

06102 Lowest elevation and hottest climate in Blue Mts. provides refuge for species as the climate changes from colder than it had been. Majority of area is basalt substrate, there are outcrops of limestone, granitics and other sedimentary rocks. Area generally very dry and hot but some perennial springs and creeks provide habitat that support unusual species. Steep slopes and inaccessibility have protected some areas from extreme overgrazing that has occurred in other parts of the canyon. The extreme elevation changes in a very short distance provides a very wide variety of species and habitats. Seven Devils Mts. and the rim of Hell's Canyon provide habitat for subalpine species. (Jimmy Kagan, Paula Brooks)

06103 Unusual rock types (granitics, limestones, metamorphic and sedimentary). Subalpine habitat types. Area is relatively pristine condition. Very little logging or grazing has occurred in recent times. Many species that are common in the Cascades are found in the Elkhorns and nowhere else in the Blue Mtns. (not even in the Wallowas). Several Rocky Mtn. and boreal species are found in the Elkhorns. Lots of boggy areas, wet meadows and well developed riparian zones. One species, Lomatium erythrocarpum, is found only in the high elevation areas of Elkhorns. Three others species are found only here or Wallowas. South slope, steep areas dominated by big ponderosa pine and mountain mahogany.

06104 Area is floristically very diverse and has many endemic species. Also, there are lots of Rocky Mt. and boreal species. Unusual rock types are responsible for much of the high diversity and unusual plants. Limestone, greenstone, and argillites. Most of the endemism is related to limestone and other calcareous soils. High elevation, cold air drainages (Hurricane Creek, Lostine River and west and east forks of Wallowa River) provide special climate for Rocky Mt. and northern species. Many of these are found nowhere else in Oregon. The mountain range is essentially an island in otherwise lower and drier area. The mountains catch much more snow and rain than the surrounding area. This contributes to the great variety of wetland affiliated species. Duck Lake and Twin Lakes area have

large areas of sphagnum bogs. Many species found here are unusual or totally unknown elsewhere in Blue Mts.

07102 This area includes 3 endemic species in addition to unique habitats supporting a number of disjunct species. The endemics occur in two major cover types - cedar and grand fir - and to some extent in lodgepole.

07103 This is a small area where two narrowly distributed endemic species occur together, both candidates for listing. Thlaspi is more widely distributed endemic.

07104 The palouse prairie occurs on rolling hills of glacial loess in the vicinity of Moscow, ID and adjacent Washington. Much of this grassland has been converted to farming and grazing. Idaho fescue, bluebunch wheatgrass and an assemblage of forbs are dominant taxa.

07105 Unique canyon grassland ecosystem containing numerous endemic plants and land snails. Steep slopes of canyon range from low elevation of about 800 feet to over 5000 feet on south slopes. Climate is relatively arid but shrubs do not comprise significant cover as they do to the south. The grassland communities are dominated by Agropyron spicatum and Festuca idahoensis along with bunch grasses.

07201 *Species known nowhere else in the state. High diversity due to concentration of Idaho alpine, rare plants. The Kane Lake cirque contains subalpine meadows, tree islands/krummholz and lakeside meadows, communities and meadows, cliff, talus/scree, fellfield alpine plant communities. 180 vascular plant species are known to occur in the area.

07202 Several notable taxa that are disjunct or slightly more widespread (*). This region is characterized by high geologic/edaphic variability and high elevational relief (valleys to alpine). The largest expanses of alpine habitat in Idaho occur in east-central Idaho.

07203 Low elevation canyons in high-relief mountainous terrain along with intervening uplands. Two adjoining ecosystems both dominated by forest. Canyon ecosystem limited to river breaklands, western redcedar forest types. Biodiversity due to a number of disjunct Pacific coast species (first 7). Cardamine is narrow endemic. Mimulus is regional endemic. Botrychium and Cypripedium are old growth cedar associates. High diversity of moist site ferns. Grand fir mosaic occupies uplands above 6000 feet. Most notable are 2 endemics specifically associated with the ecosystem: Syntheris and Danynotus and rare species Mertensia, that is highly localized in widely scattered locations in the PNW.

07204 Low elevation, warm, moist canyon ecosystem dominated by Thuja plicata habitat types with numerous (30-40) taxa with Pacific coast affiliations. Species limited to canyon refugia in Idaho. Includes best developed Alnus rubra communities in northern Rockies. In addition, 9 additional fern species are well represented.

07205 Both coastal disjuncts and endemic species are found in the lower elevations of the St. Joe River drainage. These species occupy sites ranging from moist cedar forests to opening in drier Douglas-fir forests. This drainage includes significant amounts of private land which has been heavily logged in both the past and present.

07206 Wetlands (ponds, lakes, and sphagnum fens) associated with Priest Lake and adjoining drainages. Numerous species occur nowhere else in Idaho. Most are boreal species at the southern periphery of their range. Wetlands and forest communities are diverse in composition and type.

07207 Similar to lower Moyie and Priest River valley sites, this area is comprised of isolated peatlands, occurring along low-gradient streams. Unlike Priest River valley and lower Moyie River sites, which were formed by continental glaciation, the Smith Creek peatlands occur at intermediate elevations along the east slope of the Selkirk Mts. in valleys formed by alpine glaciation. Poor fens (minerotrophic) predominate and sphagnum is the major peat-forming substrate.

07208 Many boreal disjuncts at the southern edge of their range in Idaho. Several isolated peatlands occur on the bench bounded by the Parcell Mts., Moyie River and Kootenai River that was under continental periodically during the Pleistocene bedrock and belt series metasediments. The peatlands occur along low gradient, shallow valleys on this bench. The peatland communities mostly include poor fens that are minerotrophic (hydrology tied to regional ground water) and shrub-carrs. Sphagnum is the major peat-forming substrate. (Bob Mosely)

07209 Peatland substrates occurring along low gradient, generally spring-fed streams along the eastern slope of the Sawtooth Range. Most sites occur on glacial outwash areas adjacent to moraines. Elevations are between 6000-7000 feet. The peatlands are scattered and relatively small but add significantly to the Sawtooth valley biodiversity.

07210 Valley peatlands are rare in north Idaho and Tule Lake has 3 rare species.

08201 Calcareous substrate, bedrock, gravel terraces, alkaline silt terraces and fens. This area is extremely arid due to the rain-shadow effects and due to the limestone substrate. This area has several endemics as well as disjuncts or range extensions. (Rosentreter, Mosely, and Sprecht)

08202 Eastern limits of several species. (Smithman, Debolt, Rosentreter, and Packard)

08203 Shallow clay over basalt (complements Owyhee uplift) -sand -sand -sand, western limits of range. (Smithman, Debolt, Rosentreter, and Packard)

08204 Southern species occurring in apparent pathways. (Smithman, Debolt, Rosentreter, and

Packard)

08205 Smithman, Debolt, Rosentreter, and Packard.

08206 Smithman, Debolt, Rosentreter, and Packard.

08207 Smithman, Debolt, Rosentreter, and Packard.

08208 Smithman, Debolt, Rosentreter, and Packard.

08209 Smithman, Debolt, Rosentreter, and Packard.

08210 T14NR4ESEC32, junction of Big Springs and Henry's Forks. Wetland/bog complex. Cicuta bulbifera occurs on a narrow edge of a small pond within the complex associated with Sium suave, occurs on the southern reach of the complex along Henry's Fork. (Robert Sprecht)

08211 Forest Service lands. Alpine and high subalpine communities occurring on gentle-sloping cirque bottoms and broad ridges. Extensive whitebark pine woodlands in the cirque provide important food sources for grizzly bears, which den in the upper Targhee Creek area. The alpine vegetation is unlike anywhere else in Idaho, consisting of communities more similar to central and southern Rockies. The Carex drummondii turf community characterizes this phytogeographic pattern. This plant association has a very limited distribution in Idaho. The rare species, Castelleja pulchella and Telesonix jamesii, also follow this pattern. (Bob Mosely)

08212 BLM, private, and State lands. 516NR3ESEC32,33; T15NR3ESEC 1,2,3,10,11,12,14,15,22. Complex of wetland and bog communities along the north and east shore of Henry's Lake. These communities are remnants of a larger wetland complex that was lost when Henry's Lake was dammed and the water level rose 10-15 feet. Floating islands (plant mats) were prevalent with the rising water and were hauled off as irrigational hazards. The Targhee Creek inlet area and Howard Creek have ephemerally wet meadows with Claytonia lanceolata flava along with Salix cardida. (Robert Sprecht)

08101 Forest Service lands. Centennial Mts. along Continental Divide between Montana and Idaho, on Conglomerate Peak 9996, Knob Mt., and the Thumb. Beaverhead conglomerate rock outcrops and associated substrates form a very limited habitat distribution for the species. Adjacent soils and rock formations of differing parent materials do not support the species. Community type is unclassified and has poor species diversity. (Robert Sprecht)

08102 Private land. T3NR45ESEC3,4,8,9,16; T4NR45ESEC15,20,21,28,29,30,32,33. Alkaline wetlands and fens complex. Clay and silt, fine textured soils. Primula incana

occurs on bare clay soil microsites on sides of hummocks. Salix cardida and Carex buxbaumii occur with fens, peat bog, and stream/spring complexes. (Robert Sprecht)

08103 Private, BLM, FS and Idaho Fish and Game lands. Summit Creek, Custer County, ID, Little Lost Basin, Texas Creek, Lemhi County, Lemhi River basin and Birch Creek, Lemhi and Clark County, Birch Creek basin. Habitat consists of wet alkaline meadows and fens at the headwaters of the three stream complexes that are spring fed. Soils are fine textured and alkaline at pH up to 9.4, and is perennially wet. Plants are found on low terraces and bars along the spring/stream complexes and on the moist sections of hummocks. Occurs between the wetter vegetative sites of Carex simulata and drier hummocks of Carex scirpoide. (Robert Sprecht)

08104 Tuffaceous outcrops characterize the habitat of these 2 endemic species. Both species are relatively new to science, having been described within the past 20 years. These outcrops are inclusions within the surrounding vegetation.

08105 East-west oriented river system composed of various rhyolitic rock flows. (Rosentreter, Smithman, and Packard)

08106 Antique slickspots in the lower Snake River plain (vernal pools). (Rosentreter, Smithman, and Packard)

08107 North-south oriented river system composed of coarse rhyolite. (Rosentreter, Smithman, and Packard)

08108 A2 ash not weathering to clay. Mentzelia packardiae not known from Idaho. Trifolium owyheense occurs on this substrate, but also on other types of ash and in ecotones throughout the units A1 and A2. A1 ash weathering into clay. Discontinuous outcrops, various colors. Sometimes same source as non-clay ash but evolved under different cologies. Stores water by loose chemical bonding. Ion exchange properties, probably low aggregate content. Slow to warm up, later flowering. Convergent evolution in flower form and color, probably resulting from competition for pollinators. Substrate +/- 20,000,000 years but probably not exposed for this long. (Debolt, Packard, Rosentreter, and Smithman)

08109 Endemic to hard bottom playa. Habitat may not have been available during pluvial period, species may have arisen since that time. Extends into OR. Hard bottom clay, roots probably adapted to some degree of anaerobic respiration. Only species able to cope with the habitat. (Packard, Debolt, Rosentreter, and Smithman)

08110 Gravel sands, oditic limestone S2. (Debolt, Smithman, Packard, and Rosentreter)

08111 S1 sand pocket. Pliocene lake sands of Malheir Co. and adjacent Idaho. Exceedingly low

species diversity. (Smithman, Debolt, Packard, and Rosentreter)

08112 Discontinuous. Clay content lower than S1, but possible not entirely lacking, zeolites present. Complements ash species listed in Owyhee front for Idaho and needs to be considered for the interpretation of Idaho endemics. (Smithman, Rosentreter, Debolt, and Packard)

08113 This unique area has both a distinctive arid rain-shadow area and the Challis volcanics substrate. (Rosentreter and Mancusco)

08114 This large area is unique for its endemics and its diversity. There are a number of species in this area that are disjunct from farther to the south in Nevada, S. California and Utah as well. The area consists of richly varied substrates and soils types, from Oolitic limestone to ash to sand flats to clay lakebed sediments to algal reefs. We drew 1 large polygon for this region, but denited 2 known Oolitic limestone pockets. The predominant major vegetation type would be salt desert shrub (shadscale, greasewood, bud sage, 4-2ing, saltbrush, Indian ricegrass, squirreltail grass), with lesser amounts of Wyoming big sagebrush and basin big sagebrush vegetation types. The vegetation where many of these species occur is characterized by sparse vegetation (i.e. lots of open ground). We chose to divide the region broadly into just four Geologic/substrate types, and listed the species that are somewhat unique for each of. (Debolt, Rosentreter, Smithman, and Packard)